Concept Paper

Subjectica: A Neurophenomenological Framework for Lateralized Embodied Cognitive Stance

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Subjectica: A Neurophenomenological Framework for Lateralized Embodied Cognitive Stance

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Abstract

The mind–body problem remains a foundational unresolved issue at the intersection of philosophy of mind and cognitive science. While contemporary research on hemispheric asymmetry has produced extensive accounts of neural specialization and functional localization, it offers limited explanatory resources for understanding how lateralized neural dynamics are lived, enacted, and stabilized as embodied patterns of behavior. In prevailing frameworks, bodily asymmetry is often treated either as an epiphenomenal by-product of cognition or as a static anatomical correspondence, leaving unresolved the conceptual gap between neural processes, phenomenological orientation, and observable bodily action. This manuscript presents *Subjectica*, a theoretical neurophenomenological model that reconceptualizes hemispheric asymmetry as a dynamic mode of embodied sense-making rather than as a fixed neural or anatomical property. The model approaches lateralization as a continuous sensorimotor organization through which cognitive stance—understood as a situated orientation of experience and action—is enacted and maintained. From this perspective, bodily kinematics, posture, and segmental motor organization are not secondary expressions of cognition but constitutive dimensions of how cognitive orientation is realized in the world. The framework introduces four interrelated conceptual constructs: Personal-Oriented Left Side (PO-LS), Society-Oriented Right Side (SO-RS), the Asymmetric Neurobehavioral Signal (ANS), and Body Segments (BS). These constructs function as phenomenologically constrained interpretative operators that mediate between hemispheric functional asymmetry, lived orientation, and structured bodily dynamics. Rather than proposing deterministic mappings, the model articulates probabilistic and relational patterns through which lateralized cognitive orientations become embodied and behaviorally organized. *Subjectica* is proposed as a generative philosophical framework that clarifies the status of bodily asymmetry in theories of embodied cognition and neurophenomenology. Its primary contribution lies in specifying conceptual constraints and interpretative structures that enable future empirical operationalization, without reducing phenomenological orientation to either neural localization or purely behavioral description.

Keywords: philosophy of mind; embodied cognition; neurophenomenology; hemispheric asymmetry; lateralization; bodily orientation; sensorimotor embodiment; Subjectica

Introduction

This work presents *Subjectica*, a theoretical neurophenomenological framework developed to clarify the relationship between hemispheric asymmetry, embodied cognition, and cognitive orientation. The present manuscript offers a philosophically framed formulation of the Subjectica model, whose canonical operational version has been previously made publicly available as a theoretical preprint (Shopin, 2025). The purpose of the current text is not to introduce new empirical claims, but to situate the model within the conceptual landscape of philosophy of mind and embodied cognition, and to explicate its foundational assumptions and interpretative structure.

The Subjectica model is defined by a set of internal axioms that specify its assumptions, scope, and epistemic commitments. These axioms are not proposed as universal metaphysical truths, but as

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formal constraints necessary for the internal coherence, interpretability, and potential testability of the framework. In this respect, the model aligns with a growing tradition of theoretically constrained approaches in cognitive science and philosophy that treat models as structured explanatory devices rather than as literal descriptions of mental reality.

Embodied cognition theories argue that cognitive states do not arise from purely abstract or amodal computations, but are enacted through continuous sensorimotor coupling between brain, body, and environment (Varela, Thompson, & Rosch, 1991; Barsalou, 2008; Gallagher, 2017). From this perspective, cognition is not confined to intracranial processes but unfolds through bodily organization, action, and situated interaction. Despite extensive theoretical and empirical development, several foundational problems remain unresolved within this paradigm. First, there is no unified conceptual account explaining how subjective cognitive stance—such as personal involvement, social orientation, or evaluative positioning—systematically correlates with bodily asymmetry. Second, empirical findings linking hemispheric specialization to observable movement and postural biases remain fragmented, context-dependent, and at times contradictory. Third, there is a lack of a formally articulated interpretative layer capable of relating lived cognitive orientation to structured patterns of whole-body behavior.

Research on hemispheric asymmetry has robustly demonstrated that the cerebral hemispheres differ in their processing biases, particularly with respect to affective regulation, self-related processing, social evaluation, and contextual integration (Tucker, 1981; Davidson, 1992; McGilchrist, 2019). However, these findings are predominantly articulated at the neural, perceptual, or task-based behavioral level, and rarely extend to whole-body kinematics understood as an integrated and meaningful signal. Neurophenomenological approaches have further emphasized the necessity of linking first-person experience with third-person description, arguing that cognition cannot be adequately understood without accounting for lived bodily orientation (Varela, 1996; Thompson, 2007). While this work successfully identifies the epistemic problem, it leaves open the question of how such integration can be formally specified without collapsing phenomenology into neural localization or behavioral reductionism.

As a consequence, a persistent conceptual gap remains between internal hemispheric dynamics, subjective experience, and observable bodily action. Existing models tend either to remain at the level of neural description without specifying embodied manifestation, or to describe posture and movement without a principled connection to cognitive orientation. What is missing is an intermediate, explicitly defined framework capable of relating lateralized cognitive processing to structured, interpretable bodily asymmetry.

The present work introduces such a framework. Subjectica conceptualizes bodily asymmetry not as a static trait or anatomical fact, but as a dynamic, embodied signal reflecting shifts in cognitive stance. The model articulates four core constructs: (1) the Personal-Oriented Left Side (PO-LS), associated with self-referential and introspective orientation; (2) the Society-Oriented Right Side (SO-RS), associated with socially evaluative and normative orientation; (3) the Asymmetric Neurobehavioral Signal (ANS), defined as a continuous indicator of lateralized bodily dominance; and (4) Body Segments (BS), which provide a structured anatomical basis for interpreting segmental and whole-body asymmetry.

Together, these constructs function as phenomenologically constrained interpretative operators that mediate between hemispheric lateralization, lived cognitive orientation, and observable bodily dynamics. Rather than claiming direct access to internal mental content, the model specifies lawful and probabilistic relationships through which cognitive stance becomes enacted in posture, movement, and spatial organization. In doing so, Subjectica offers a philosophically grounded contribution to ongoing debates in embodied cognition and neurophenomenology, while preserving a clear pathway toward empirical operationalization articulated in its canonical formulation.

Theoretical Axioms

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The Subjectica model is grounded in a set of theoretical axioms that define its conceptual scope and interpretative commitments. These axioms function as formal constraints that specify how hemispheric asymmetry, embodied cognition, and bodily expression are to be understood within the framework. They are not empirical claims in themselves, nor metaphysical assertions about the nature of mind, but necessary assumptions that render the model internally coherent and philosophically tractable.

Axiom 1. Neurobehavioral Unity of Cognition and Bodily Expression

The Subjectica model assumes that cognition and bodily expression form a single, integrated neurobehavioral system rather than two independent or hierarchically ordered domains. Cognitive states—including intentions, affective orientation, evaluative stance, and attentional focus—are not treated as internally encapsulated mental entities that subsequently produce bodily outputs. Instead, they are understood as dynamically enacted patterns that unfold through bodily organization, sensorimotor regulation, and action.

Within this framework, bodily dynamics probabilistically covary with ongoing cognitive orientation, subject to contextual, regulatory, and social constraints. This formulation explicitly avoids strict one-to-one determinism between mental contents and bodily movements. The body is not interpreted as a transparent or infallible readout of cognition, but as a structured expressive medium through which cognitive stance becomes partially observable.

Hemispheric asymmetry, accordingly, is not reducible to neural localization or abstract cognitive functions alone. Lateralized neural dynamics are assumed to unfold over time through posture, movement, and sensorimotor coordination, rather than remaining confined to intracranial processes. This position is consistent with core claims of embodied cognition, according to which posture, gesture, and movement are constitutive components of cognition rather than secondary by-products (Wilson, 2002; Barsalou, 2008).

From a neurophenomenological perspective, this axiom enables a principled linkage between phenomenological categories—such as intention, motivation, or attentional orientation—and observable bodily dynamics, without collapsing subjective experience into purely behavioral or neural descriptions. While substantial empirical work supports a general coupling between cognition and bodily expression, the systematic articulation of how cognitive orientation becomes laterally embodied remains underdeveloped. Addressing this conceptual gap constitutes a central motivation of the Subjectica model.

Axiom 2. Contralateral Embodiment of Hemispheric Functional Asymmetry

The model assumes that functional hemispheric asymmetry gains systematic access to observable behavior through the contralateral organization of neurobehavioral control. Due to crossed cortical–motor pathways, lateralized neural dynamics are expressed through asymmetric patterns of posture, movement, and sensorimotor regulation across the body.

Within this interpretative framework, the left hemisphere—commonly associated with sequential processing, rule-based control, and normative regulation—predominantly manifests through the right side of the body, termed the Society-Oriented Right Side (SO-RS). This side is interpreted as an embodied vector oriented toward social coordination, external evaluation, and adaptive conformity. Conversely, the right hemisphere—associated with holistic processing, contextual integration, and self-referential awareness—is assumed to manifest primarily through the left side of the body, termed the Personal-Oriented Left Side (PO-LS), which functions as an embodied interface for personal relevance, internal evaluation, and subjective orientation.

This formulation is compatible with established accounts of hemispheric specialization and motivational asymmetry, which document systematic differences in attentional deployment, affective regulation, and self-related processing across hemispheres (Tucker, 1981; Davidson, 1992; McGilchrist, 2019). However, while hemispheric asymmetry is well documented at the neural level, its translation into stable, interpretable behavioral markers remains insufficiently specified.

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The Subjectica model addresses this gap by treating whole-body kinematics as an intermediary domain in which lateralized neural dynamics become embodied. Rather than positing direct correspondences between isolated neural functions and discrete movements, the model emphasizes patterned asymmetries across posture, movement direction, and segmental activation as the primary expressions of hemispheric dominance. These patterns are understood as continuous and probabilistic rather than categorical or deterministic.

Axiom 3. Segmental Differentiation and Hierarchical Embodiment of Cognitive Asymmetry

Cognition is not assumed to be expressed uniformly across the body. Instead, the model adopts a principle of segmental differentiation, according to which different body segments contribute in distinct ways to the embodiment of cognitive orientation. This segmentation is grounded in established principles of neuromotor organization and functional specialization and is employed here as an analytic framework rather than as a claim of strict modular determinism.

Research on gesture and embodied action demonstrates that bodily movement—particularly of the upper limbs—is tightly coupled with processes such as conceptual organization, memory retrieval, and problem solving (McNeill, 1994; Goldin-Meadow, 2014). Hemispheric models of motivational orientation further link lateralized cortical dynamics to systematic asymmetries in motor expression. Additionally, studies of motor compensation show that constraint or suppression of activity in one segment leads to reliable redistribution of activity across other segments in order to preserve functional goals (Hylin et al., 2017).

Within the Subjectica framework, this compensatory redistribution is interpreted not merely as a mechanical adjustment but as a potential indicator of shifts in embodied cognitive orientation. The Asymmetric Neurobehavioral Signal (ANS) is therefore understood as a distributed phenomenon, generated by lateralized neural dynamics and expressed through coordinated activity across multiple body segments.

Proximal segments—such as the trunk, shoulders, and hips—are assumed to contribute primarily to global postural organization, spatial orientation, and motivational stance. Distal segments—particularly the hands and fingers—serve as high-resolution expressive channels through which symbolic, deliberative, and communicative aspects of cognitive orientation become visible. This hierarchical differentiation allows the model to reconcile global postural asymmetry with localized expressive asymmetries without reducing one to the other.

Facial musculature occupies a special position within this hierarchy. Although facial expressions are central to social communication, they are subject to substantial voluntary control and cultural regulation. Accordingly, facial activity is treated as conditionally informative but not sufficient, in isolation, for inferring the ANS. Oculomotor behavior, by contrast, operates on shorter temporal scales and is less accessible to conscious modulation, making it a comparatively robust indicator of attentional and sensorimotor asymmetry when it converges with other bodily signals.

Axiom 4. Bidirectional Neurobehavioral Feedback and Adaptive Self-Regulation

The model assumes that neurobehavioral relations are fundamentally bidirectional. Cognitive orientation shapes bodily expression, but bodily organization and movement also modulate cognitive dynamics through feedback mechanisms grounded in neuroplasticity and sensorimotor coupling (Pascual-Leone et al., 2005).

A substantial body of research in embodied cognition supports the claim that posture, movement, and sensorimotor activity influence affective appraisal, attentional allocation, and motivational orientation (Barsalou, 2008; Niedenthal, 2007). Within the Subjectica framework, such effects are not interpreted as simple causal manipulations of mental content, but as lawful modulations of the embodied cognitive background within which interpretation and action occur.

Motor control research further demonstrates that constraint or alteration of activity in one body segment leads to compensatory adjustments across the motor system. The model extends this principle by proposing that such compensatory patterns alter the embodied cognitive context itself, biasing orientation, readiness for action, and interpretative stance. This proposal is consistent with

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dynamical systems approaches that treat cognition and behavior as emergent properties of coupled brain–body–environment systems (Thelen & Smith, 1994; Kelso, 1995).

Axiom 5. Cultural Modulation of Embodied Neurobehavioral Expression

Finally, the model assumes that while the basic neurobehavioral mechanisms underlying embodied cognition are universal, their concrete manifestations are shaped by cultural, social, and individual contexts. Cultural psychology and neuroscience demonstrate that habitual cognitive styles, attentional patterns, and motor practices are systematically modulated by social norms and cultural learning (Markus & Kitayama, 1991; Nisbett et al., 2001).

Lateralized bodily practices—such as culturally prescribed hand use, greeting rituals, or spatial norms—illustrate how social conventions shape the surface expression of embodied asymmetry without eliminating its biological foundations (McManus, 2002). Cultural reinforcement can modulate the weighting, visibility, and habitual deployment of embodied signals, thereby influencing how cognitive orientation is expressed and interpreted in different contexts.

Within Subjectica, cultural factors are therefore treated as modulatory layers rather than as sources of distortion. Universal neurobehavioral principles provide the structural basis of embodied asymmetry, while cultural context determines the form, intensity, and social meaning of its expression.

Terminological and Conceptual Framework

Research on hemispheric asymmetry frequently employs the notions of Right-Hemisphere Dominant Embodiment (RHDE) and Left-Hemisphere Dominant Embodiment (LHDE) to describe lateralized neural states associated with differences in processing style, self-related awareness, and contextual integration. While these constructs are informative at the level of neurophysiological description, they remain insufficiently specified with respect to embodied spatial expression. In their standard usage, RHDE and LHDE characterize patterns of hemispheric activity but do not entail a formally articulated account of how such activity is manifested through posture, orientation, or whole-body movement.

This limitation marks a persistent explanatory gap between internal hemispheric dynamics and observable bodily behavior. Without an intermediate conceptual layer, hemispheric dominance remains an abstract neural attribution, disconnected from systematic analysis of bodily orientation and kinematics. The Subjectica model addresses this gap by introducing a set of interpretative constructs designed to mediate between lateralized neural organization and embodied expression, without collapsing one domain into the other.

Rather than proposing a direct causal mapping from neural state to bodily movement, the model advances a vocabulary for describing how cognitive orientation becomes *embodied* as structured asymmetry. These constructs do not function as diagnostic markers or deterministic indicators, but as theoretical tools for organizing and interpreting patterns of bodily engagement in relation to cognitive stance.

1) Personal-Oriented Left Side (PO-LS)

The Personal-Oriented Left Side (PO-LS) is introduced as an interpretative construct describing a mode of embodied orientation in which the left side of the body functions as the dominant channel of expression. PO-LS is not defined as a mere accumulation of left-sided movements, nor as a fixed trait of motor preference. Instead, it denotes a sustained pattern of lateralized bodily organization through which a personally oriented cognitive stance becomes embodied.

Within the broader literature on hemispheric specialization, the right hemisphere is commonly associated with holistic integration, self-referential awareness, and internally oriented evaluation. Due to contralateral organization, these functional tendencies are expressed through the left hemibody. PO-LS conceptualizes this contralateral embodiment not as a mechanical projection, but as a coherent behavioral vector through which personal relevance and subjective orientation are enacted.

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Conceptually, PO-LS refers to a cognitive position grounded in right-hemispheric functional dynamics and expressed through coordinated motor engagement on the left side of the body. Its semantic domain includes self-oriented evaluation, intuitive judgment, contextual integration, and access to autobiographical meaning. Crucially, these characteristics are not inferred from isolated gestures or movements, but from consistent patterns of lateralized engagement across posture, movement, and spatial occupation.

Behaviorally, PO-LS is described in terms of relative displacement, spatial weighting, and frequency of engagement of the left hemibody. These kinematic features are treated as probabilistic indicators of embodied cognitive orientation rather than as direct expressions of specific mental contents. The construct thus allows a principled distinction between incidental task-related movements and a more global, embodied personal stance.

2) Social-Oriented Right Side (SO-RS)

The Social-Oriented Right Side (SO-RS) constitutes the complementary construct to PO-LS. It describes a mode of embodied orientation in which the right side of the body functions as the primary channel of expression for socially regulated and normatively structured cognition. SO-RS is grounded in functional patterns commonly attributed to the left hemisphere, including sequential processing, linguistic regulation, normative evaluation, and role-based behavioral control.

As with PO-LS, SO-RS is not a generic descriptor of right-sided movement. It denotes a structured pattern of bodily organization through which social orientation becomes embodied. By introducing this construct, the model enables discussion of social alignment, normative regulation, and externally referenced evaluation at the level of bodily stance rather than exclusively through linguistic or propositional content.

Conceptually, SO-RS refers to a cognitive stance rooted in left-hemispheric functional dynamics and expressed through coordinated motor activity on the right side of the body. Its semantic domain encompasses social adaptation, analytical regulation, impulse control, and performance in accordance with external standards. These features are inferred from coherent lateralized patterns of bodily engagement, not from isolated or symbolic gestures.

Behaviorally, SO-RS is described through relative displacement, spatial occupation, and frequency of activity of the right hemibody. As in the case of PO-LS, these features are interpreted within an integrative framework that relates bodily organization to phenomenological stance without assuming a direct one-to-one correspondence between movement and mental state.

3) Body Segments (BS)

To avoid treating the body as a homogeneous expressive surface, the Subjectica model incorporates a principle of segmental differentiation. The concept of Body Segments (BS) provides a structured framework for analyzing how embodied cognitive dynamics are distributed across different anatomical regions.

Segmental approaches are well established across gesture research, motor control, affective neuroscience, and nonverbal communication. However, this literature remains largely fragmented and lacks an integrative account linking segmental differentiation to hemispheric asymmetry. Subjectica consolidates these lines of research into a coherent conceptual framework aligned with embodied cognition and lateralized neural control.

Within this model, the body is divided into functional segments (e.g., head, upper limbs, trunk, lower limbs), further differentiated into subsegments. Proximal segments are treated as more informative for global postural orientation and motivational stance, while distal segments are understood as more susceptible to task demands, symbolic expression, and compensatory modulation. This proximal–distal gradient enables decomposition of embodied asymmetry without reducing it to localized movement events.

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Segmental semantics are defined as probabilistic associations between body regions and classes of cognitive–affective processes. These associations function as interpretative constraints rather than deterministic mappings. For example, upper-limb activity is more closely associated with symbolic and communicative processes, axial segments with motivational orientation and engagement, and lower-body segments with approach–avoidance dynamics and intentional directionality. Facial activity, while socially salient, is treated as conditionally reliable due to its susceptibility to voluntary control and cultural regulation.

To mitigate overinterpretation, the model adopts a hierarchical interpretative scheme. Axial and postural segments are afforded the greatest interpretative weight, followed by proximal limb segments, distal limb segments, and finally facial musculature, which requires corroboration from other segments to be considered informative. This hierarchy directly addresses longstanding critiques of simplistic body-language decoding.

4) Asymmetrical neurobehavioral signal (ANS)

The Asymmetric Neurobehavioral Signal (ANS) functions as the integrative construct of the model. It conceptualizes lateralized bodily dynamics as a unified, continuous phenomenon rather than as a collection of discrete movements. The ANS does not denote a literal signal or measurable entity, but a theoretical abstraction capturing the momentary balance between personal and social embodied orientations.

Within this framework, embodied cognition is understood as a dynamic oscillation between PO-LS and SO-RS. The ANS represents this oscillation as a continuous gradient, reflecting shifts in dominance rather than categorical states. It provides a conceptual means of discussing embodied cognitive orientation at both global and segment-specific levels.

The ANS allows analysis of whole-body configuration as a coherent pattern, integrating segmental contributions without collapsing them into a single indicator. It thereby supports a non-reductive account of embodied cognition that remains compatible with phenomenological description, qualitative analysis, and future empirical operationalization, while avoiding premature methodological commitments.

Philosophical Implications and Scope of Interpretation

The Subjectica model occupies an intermediate theoretical position between philosophy of mind, embodied cognition, and phenomenology. Its primary philosophical contribution lies in articulating a non-reductive framework for relating neural lateralization, subjective orientation, and bodily expression without collapsing these domains into one another. The model does not attempt to resolve the mind–body problem in a metaphysical sense; instead, it proposes a structured way of *thinking about* how cognitive stance becomes embodied and observable.

1. Subjectica as a Non-Reductive Mediation Framework

Subjectica explicitly rejects both strong reductionism and naïve expressivism.

- It does **not** reduce cognition to bodily movement or posture.
- It does **not** treat the body as a transparent or infallible readout of mental content.
- It does **not** posit fixed mappings between specific movements and specific mental states.

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Instead, the model introduces a **mediating level of description**. Cognitive stance is neither purely internal nor directly observable; it becomes accessible only through patterned, probabilistic embodiment. The constructs PO-LS, SO-RS, BS, and ANS function as conceptual mediators that allow discussion of embodiment without conflating phenomenology, neurobiology, and behavior.

In this respect, Subjectica aligns with non-reductive physicalist and enactivist positions, according to which cognition is realized through bodily processes but cannot be exhaustively explained at a single descriptive level.

2. Clarifying the Epistemic Status of Bodily Asymmetry

A central philosophical risk in embodied approaches is the overinterpretation of bodily signals. Subjectica addresses this risk by explicitly defining the epistemic limits of inference from bodily asymmetry.

Within the model:

- Bodily asymmetry is treated as **informative but underdetermined**.
- Interpretation is **context-sensitive**, not rule-based.
- Meaning arises from **patterns and convergence**, not isolated indicators.

This position situates Subjectica between two problematic extremes:

1. The claim that bodily expression directly reveals inner mental states.
2. The claim that bodily expression is epistemically irrelevant to cognition.

By formalizing bodily asymmetry as a *probabilistic indicator of cognitive orientation*, the model preserves interpretative caution while maintaining explanatory relevance.

3. Cognitive Stance as an Embodied Orientation, Not a Mental Object

Philosophically, the notion of *cognitive stance* is central. Subjectica treats stance not as an internal object, representation, or content, but as an **orientation**—a way in which the subject is situated toward self, others, and the environment.

This orientation:

- is temporally extended rather than instantaneous;
- is enacted through posture, movement, and spatial weighting;
- cannot be localized to a single neural structure or bodily segment.

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The model thereby reframes cognition away from content-based metaphors toward **organizational and orientational descriptions**, consistent with phenomenological accounts of intentionality and enactive theories of mind.

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4. Relation to Neurophenomenology

The Subjectica model is conceptually aligned with neurophenomenological approaches while addressing a recognized methodological asymmetry within the field. Neurophenomenology, as originally formulated, emphasizes the disciplined integration of first-person experiential reports with third-person neurophysiological data in order to reduce the explanatory gap between subjective experience and neural dynamics. Subjectica accepts this epistemic objective but departs from the assumption that first-person access exhausts the phenomenological structure of cognitive orientation.

A core premise of the present model is that aspects of cognitive stance may remain **phenomenologically operative yet not explicitly thematized or linguistically articulated by the subject**. Empirical and philosophical work in phenomenology and cognitive science has repeatedly shown that lived experience includes pre-reflective, tacit, and background structures that shape perception, action, and meaning without necessarily entering conscious report. Subjectica treats embodied asymmetry as one such pre-reflective layer.

Within this framework, bodily kinematics are not interpreted as substitutes for subjective reports, nor as privileged access to hidden mental contents. Rather, they function as **indirect descriptive constraints** on cognitive orientation—constraints that may reveal dimensions of engagement, orientation, or regulation that are *not immediately accessible to introspection*, or that remain backgrounded in the subject's own narrative.

Accordingly, Subjectica proposes a complementary relation to neurophenomenology:

- First-person reports describe *what the subject experiences and recognizes*.
- Embodied asymmetry describes *how the subject is oriented and organized in action*, including aspects that may not be consciously attended to.

This distinction preserves the epistemic authority of phenomenological description while acknowledging its structural limits. Subjectica does not claim greater validity than first-person accounts; instead, it introduces a third-person phenomenological proxy that can highlight discrepancies, convergences, or blind spots in subjective reporting.

In this sense, the model extends neurophenomenology by offering a means to analyze **pre-reflective orientation** without presupposing reflective access. When first-person data are available, Subjectica can be used to triangulate experiential reports with embodied organization. When such reports are absent, unreliable, or incomplete, the model remains applicable as a theoretical tool for describing embodied cognitive stance without asserting phenomenological certainty.

Crucially, this position avoids both introspectionism and behaviorism. Subjectica neither reduces cognition to movement nor assumes that all meaningful aspects of experience must be consciously reported. Instead, it treats embodiment as a *structural condition of experience*, whose organization can be described even when it is not explicitly known to the subject.

5. Philosophical Utility and Theoretical Value

The philosophical value of Subjectica lies in its ability to:

- integrate findings from neuroscience, motor control, and phenomenology without reduction;
- clarify the conceptual status of bodily asymmetry in cognitive science;

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- offer a framework that is descriptively rich yet methodologically restrained.

By treating embodiment as a structured field of orientation rather than a code to be decoded, the model avoids both metaphysical inflation and methodological naïveté. It thereby contributes to ongoing debates on the nature of cognition, embodiment, and the proper scope of behavioral interpretation.

Limitations

Despite its integrative ambitions, the Subjectica model is subject to clear epistemic and methodological limitations. Explicit articulation of these limits is essential to prevent category errors, overinterpretation, and illicit metaphysical conclusions.

1. Context-Dependent Determination of Motivational Orientation

A central limitation of the Subjectica model concerns not the informativeness of bodily asymmetry, but the conditions under which its interpretative power is valid. Bodily kinematics do not determine cognitive meaning in isolation; however, when contextual parameters are sufficiently specified, lateralized embodied patterns provide reliable information about motivational orientation.

Within the Subjectica framework, asymmetric bodily dominance is not interpreted as revealing specific propositional contents, but as indicating the *orientation of motivation* relative to the context of action. Sustained dominance of the Personal-Oriented Left Side (PO-LS) signifies personal, self-referential, or internally grounded motivation, whereas dominance of the Social-Oriented Right Side (SO-RS) signifies socially regulated, norm-oriented, or externally referenced motivation. These orientations are not arbitrary but structurally constrained by the model's axioms.

Accordingly, when the situational context, task demands, or interactional frame are known, embodied asymmetry allows principled inference about the subject's relation to that context—specifically, whether engagement is personally grounded or socially regulated. In such cases, bodily expression functions as a reliable indicator of motivational stance rather than as an ambiguous signal.

The primary source of interpretative error arises not from bodily expression itself, but from uncertainty or misidentification of contextual reference. When the analyst lacks access to the relevant context of thought, intention, or interaction, lateralized embodiment may be misattributed, leading to erroneous conclusions. Thus, the underdetermination is contextual rather than structural.

This distinction is crucial. Subjectica does not claim that bodily asymmetry is epistemically weak; it claims that bodily asymmetry is *conditionally informative*. Accurate interpretation depends on alignment between observed embodiment and correctly specified context. Where such alignment is absent, inference must remain provisional.

2. Non-Exclusivity of Embodied Determinants

A further limitation concerns the non-exclusivity of bodily asymmetry as a determinant of cognitive stance. Subjectica does not claim that embodied orientation exhausts the factors shaping motivation, engagement, or cognitive positioning. Cognitive stance emerges from the interaction of multiple heterogeneous determinants, including linguistic structuring, associative networks, affective states, social power relations, and situational constraints.

Perceptual systems are not passive receivers of sensory input but adapt continuously to the individual's associative configuration. Linguistic formulations, observed events, and direct participation in a situation can induce abrupt associative reorganizations, phenomenologically experienced as immersion in context or a shift in engagement. Such associative transitions are frequently accompanied by spontaneous reorganization of bodily configuration, including changes in posture, redistribution of weight, and shifts in lateralized motor activity.

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Within the Subjectica framework, these postural changes are not interpreted as primary causes of cognitive shifts, but as embodied correlates of transitions between cognitive orientations. Similarly, deliberate or spontaneous changes in posture may accompany not only reactive adjustments to situational demands but also changes in intention, motivational focus, or evaluative stance. In both cases, bodily reconfiguration reflects a dynamic recalibration of the cognitive background rather than an isolated motor event.

Accordingly, bodily asymmetry is treated as one structural component within a broader adaptive system of cognition. It does not replace linguistic, affective, or social determinants, but enters into recursive interaction with them. This position explicitly avoids monocausal interpretations and emphasizes that bodily dynamics participate in cognitive organization without constituting its sole explanatory basis. Cognitive stance, in this view, is distributed across embodied, symbolic, and situational dimensions, with bodily asymmetry providing a constrained but informative window into this organization.

3. Temporal Granularity and Contextual Stability

The interpretability of embodied asymmetry within the Subjectica model is sensitive to the temporal scale and contextual embedding of observation. Momentary, mechanically constrained, or task-imposed movements do not, in isolation, provide sufficient grounds for inferring cognitive orientation. Short-lived motor adjustments may reflect situational constraints, biomechanical requirements, or transient attentional shifts rather than stable motivational stance.

Meaningful interpretation requires either temporal continuity or patterned convergence across time, body segments, and contextual frames. Stable cognitive orientation is expressed not through isolated movements but through sustained or recurrent asymmetrical organization that persists across interactional moments, postural transitions, or task phases. Temporal stability functions as an epistemic filter that distinguishes orientation-related embodiment from incidental motor activity.

Context plays a critical role in this temporal assessment. Embodied asymmetry must be interpreted relative to the unfolding structure of the situation, including task demands, social roles, and interactional dynamics. A configuration that is informative in one context may be neutral or misleading in another. Accordingly, temporal persistence alone is insufficient without contextual coherence between bodily organization and situational engagement.

Within the Subjectica framework, cognitive stance is therefore treated as a temporally extended orientation rather than an instantaneous state. Interpretation becomes warranted only when lateralized bodily patterns exhibit both temporal stability and contextual alignment. Where such conditions are absent, inference must remain provisional and descriptive rather than explanatory.

Summary

Taken together, these limitations do not weaken the theoretical coherence of the Subjectica model, but instead define its proper epistemic domain. The model is intended as an interpretative framework for describing embodied cognitive orientation under specified contextual and temporal conditions, not as a decoding system for mental contents. Its claims remain conditional, probabilistic, and structurally constrained, thereby avoiding both overinterpretation of bodily signals and reductive accounts of cognition.

Discussion: Empirical Implications and Testability

The present manuscript advances Subjectica as a purely theoretical and phenomenologically informed model. Nevertheless, the framework is not intended to remain conceptually insulated from empirical inquiry. A central strength of the model lies in its explicit articulation of conditions under which embodied asymmetry becomes empirically interpretable, and in its capacity to generate falsifiable predictions without presupposing empirical validation.

Subjectica specifies a structured relationship between cognitive stance and lateralized kinematic organization. Cognitive stance is not treated as a hidden mental variable inferred from behavior post

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hoc, but as an embodied orientation that manifests probabilistically through patterned asymmetries in posture, movement, and segmental activation. On this basis, the model introduces a theoretically defined kinematic index—the Asymmetric Neurobehavioral Signal (ANS)—which provides a formal means of relating whole-body and segment-level motor dominance to motivational orientation.

Importantly, the ANS is not proposed as a direct measure of mental content, intention, or belief. Its function is constrained to indicating the orientation of engagement—personal versus socially regulated—relative to a specified context. This distinction preserves interpretative rigor and avoids the common error of treating bodily behavior as a transparent readout of cognition. The model thereby delineates a narrow but tractable empirical target: the embodied organization of motivational stance, rather than cognition in general.

On this basis, Subjectica generates a set of explicit, empirically testable predictions. First, tasks involving self-referential processing, introspection, autobiographical evaluation, or internally grounded judgment are predicted to yield statistically significant dominance of the Personal-Oriented Left Side (PO-LS), expressed as left-sided weighting in the global ANS relative to neutral or baseline conditions. Second, tasks emphasizing social evaluation, normative judgment, role-based behavior, or externally referenced decision-making are predicted to produce statistically significant dominance of the Social-Oriented Right Side (SO-RS), reflected in right-sided ANS weighting(If a person is not personally immersed in such communication). Third, during controlled task manipulation, axial and proximal body segments (including head, neck, shoulders, and trunk) are expected to exhibit stronger and more stable lateralization than distal extremities, which are more susceptible to task-specific demands and compensatory modulation. Patterns of segmental instability or divergence are predicted under conditions of cognitive conflict, competing motivations, or ambiguous contextual framing.

These predictions are formulated to be falsifiable. Failure to observe systematic lateralized patterns under the specified conditions, or consistent reversal of predicted dominance independent of context, would count against the model's central claims. In this sense, Subjectica does not rely on interpretative flexibility to secure its validity; it explicitly exposes its assumptions to empirical risk.

At a conceptual level, the framework bears relevance for theoretical discussions across multiple domains concerned with embodied organization, including cognitive psychology, social cognition, learning theory, and human–environment interaction. However, such relevance should be understood as theoretical rather than applicative. The present model does not propose diagnostic tools, intervention protocols, or predictive technologies. Its contribution lies in clarifying how bodily asymmetry may be legitimately incorporated into scientific and philosophical accounts of cognition without collapsing into either behaviorism or introspectionism.

Consistent with its scope, this manuscript reports no original empirical data from human participants. Its contribution is theoretical: the proposal of a formally constrained model, a principled interpretative framework, and a set of empirically tractable predictions. By doing so, Subjectica seeks to clarify the conceptual conditions under which embodied asymmetry can function as a meaningful object of investigation, rather than as a speculative or metaphorical construct.

Conclusion

Subjectica presents a formally articulated theoretical model that links lateralized bodily dynamics with cognitive stance through an explicit neurobehavioral logic. The framework integrates phenomenological, kinematic, and cognitive levels of description, thereby addressing a persistent gap between abstract accounts of cognition and observable embodied organization. By conceptualizing asymmetry not as a categorical or trait-like property, but as a continuous, segmentally distributed, and temporally dynamic signal, the model offers a coherent account of embodied cognitive orientation.

The primary contribution of the present work lies in conceptual clarification and structural rigor rather than empirical demonstration. Subjectica defines a set of core constructs, specifies their internal relations, and outlines a principled operational pathway that enables the formulation of falsifiable

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predictions. In doing so, it establishes a shared conceptual vocabulary for discussing lateralized embodiment without reducing complex cognitive phenomena to simplistic motor correlates or ungrounded behavioral intuitions.

Crucially, the framework explicitly delineates its own limits. The absence of empirical validation, the influence of cultural and situational modulation on bodily expression, and the contextual instability of cognitive–body coupling are acknowledged as substantive constraints. These limitations are not treated as weaknesses to be minimized, but as boundary conditions that delimit the scope of legitimate inference and prevent unwarranted generalization. Subjectica should therefore be understood as a structured theoretical proposal that organizes and constrains future inquiry, rather than as a closed or complete explanatory system.

Taken together, this work provides a disciplined starting point for systematic empirical testing, cross-cultural comparison, and multimodal integration with neural, physiological, and phenomenological data. Its value lies in clarifying how cognitive stance may be expressed, modulated, and negotiated through the dynamics of the living body, while preserving methodological restraint and philosophical coherence.

Declaration

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